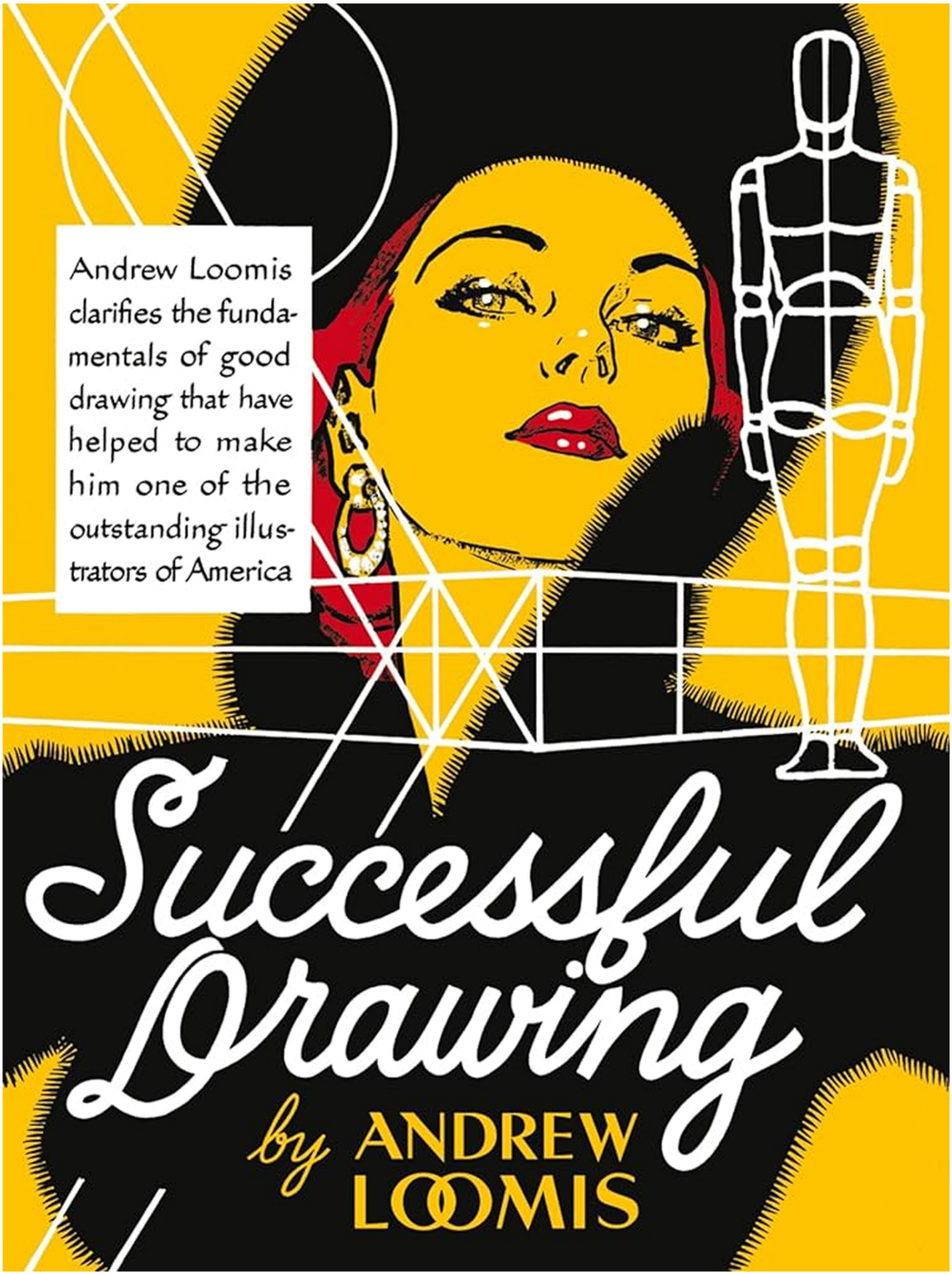
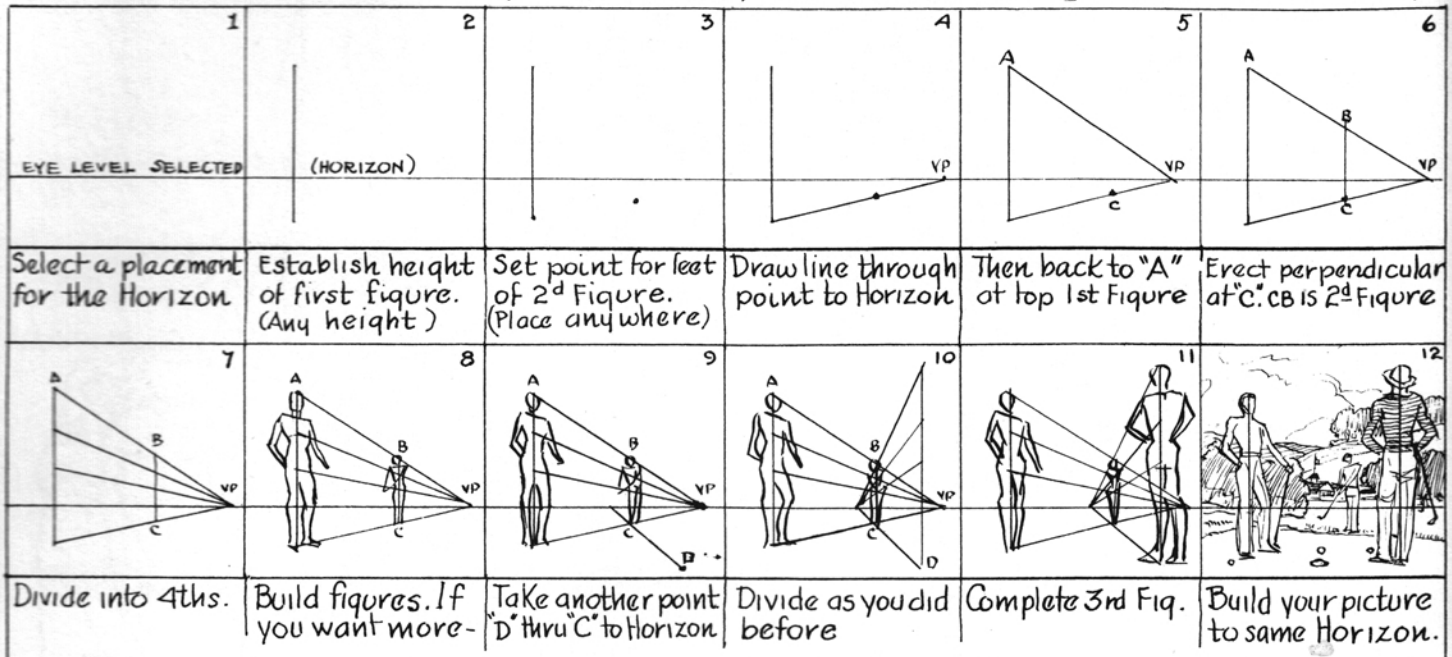

Andrew Loomis clarifies the fundamentals of good drawing that have helped to make him one of the outstanding illustrators of America
Successful Drawing
by ANDREW LOOMIS

PROPORTION IN RELATION TO THE HORIZON

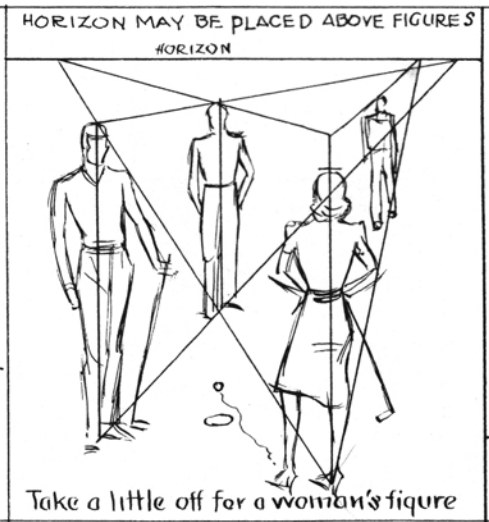
How to build your picture and figures from any eyelevel (or Horizon, which means the same)



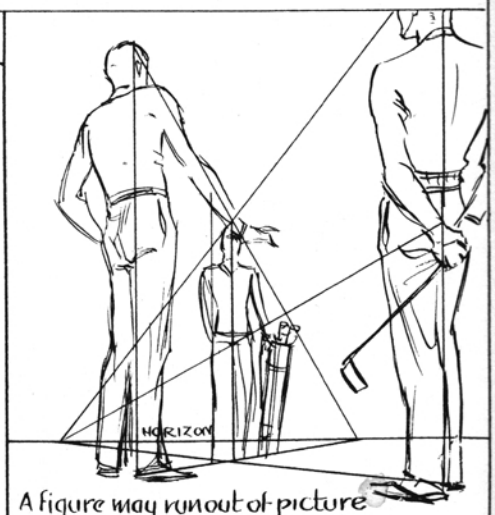
Rule: Horizon must cross all similar figures on a level plane at the same point. (above, at knees)

HOW TO LAY OUT THUMBNAIL SKETCHES FOR FIGURE PLACEMENTS AND SIZES

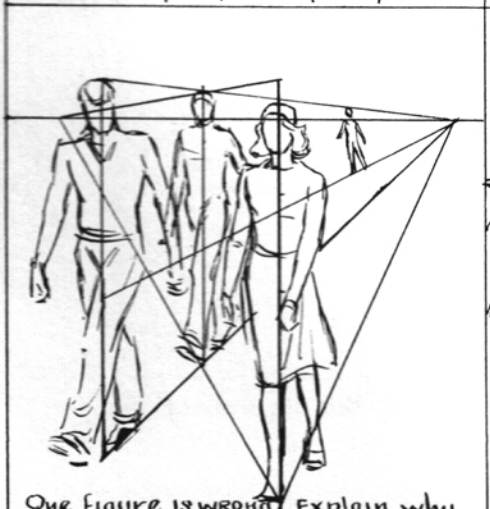
From one figure you can get any number

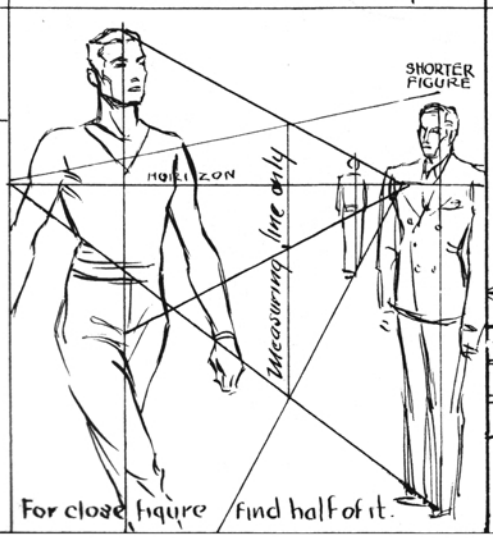


Take a little off for a woman's figure

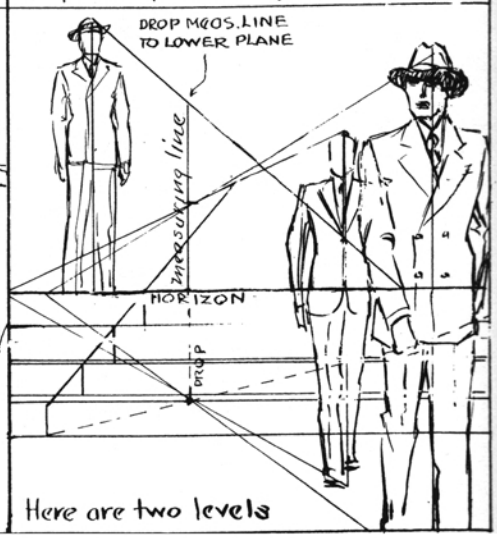


A figure may run out of picture


One figure is WRONG! Explain why.

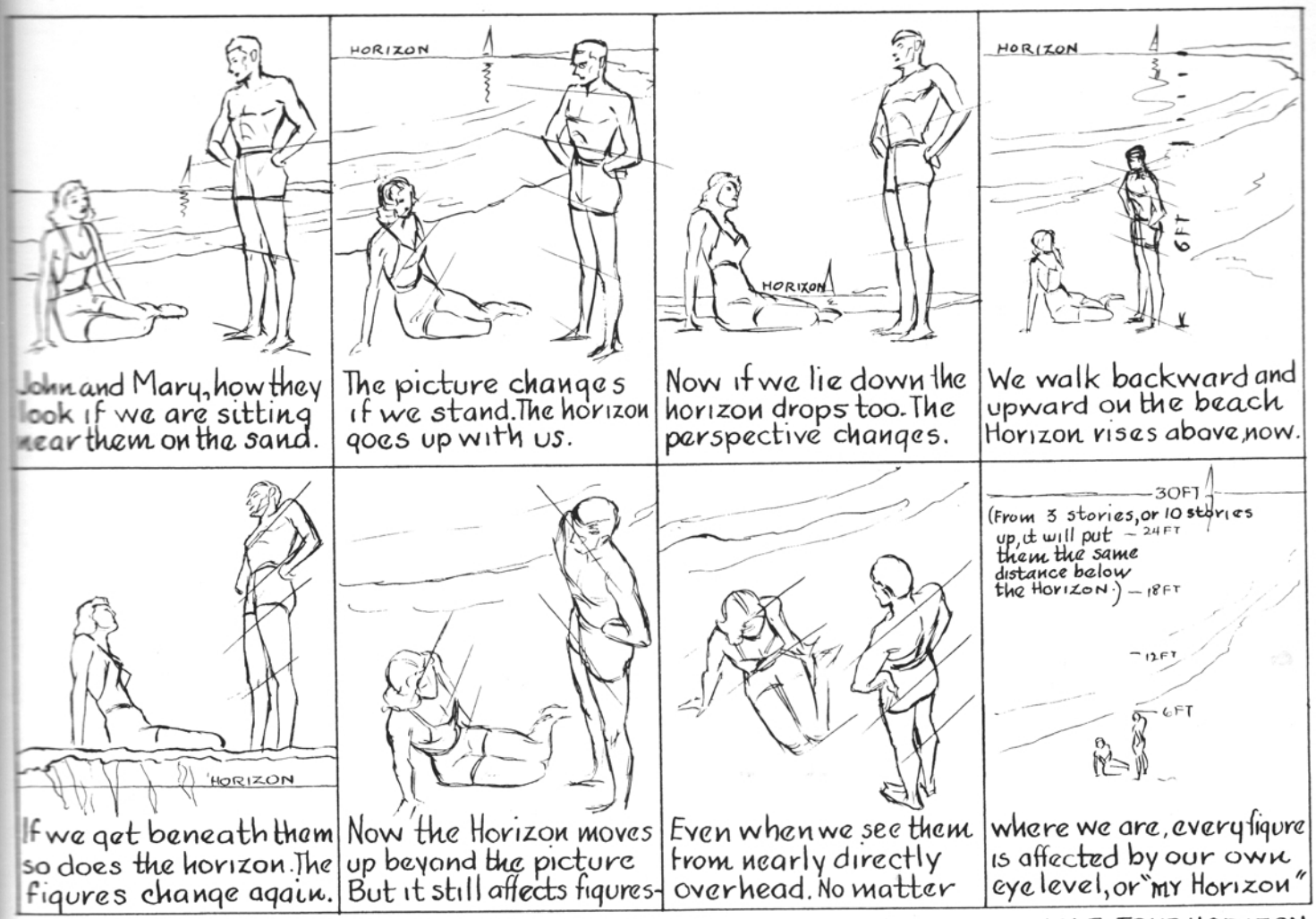


For close figure find half of it.



Here are two levels

THE JOHN AND MARY PROBLEMS



John and Mary, how they look if we are sitting near them on the sand.

The picture changes if we stand. The horizon goes up with us.

Now if we lie down the horizon drops too. The perspective changes.

We walk backward and upward on the beach Horizon rises above, now.

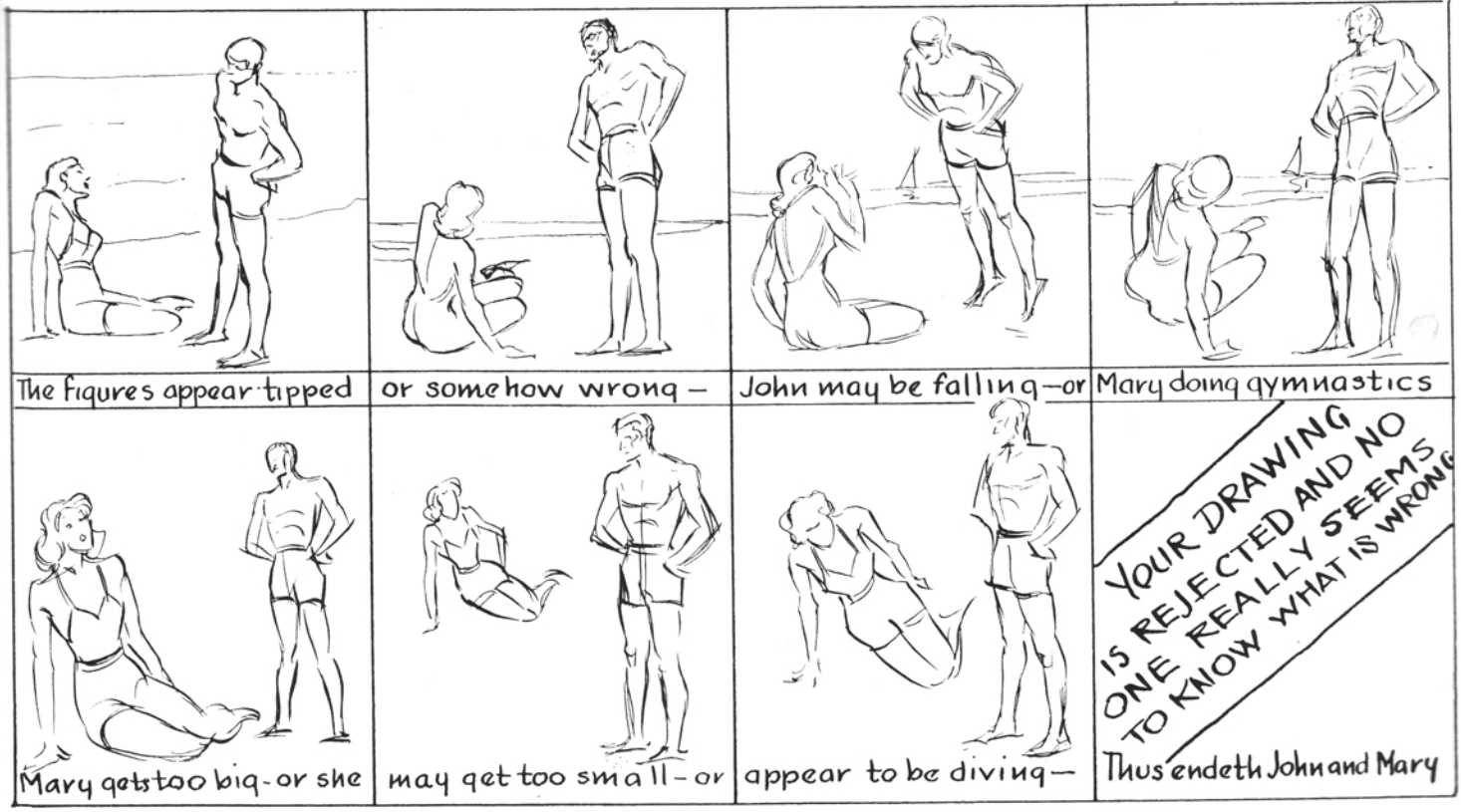
If we get beneath them so does the horizon. The figures change again.

Now the Horizon moves up beyond the picture But it still affects figures-

Even when we see them from nearly directly overhead. No matter

where we are, every figure is affected by our own eye level, or "MY Horizon"

SOME THINGS THAT MAY HAPPEN WHEN FIGURES ARE NOT RELATED TO A SINGLE TRUE HORIZON



The figures appear tipped

or somehow wrong—

John may be falling—or

Mary doing gymnastics

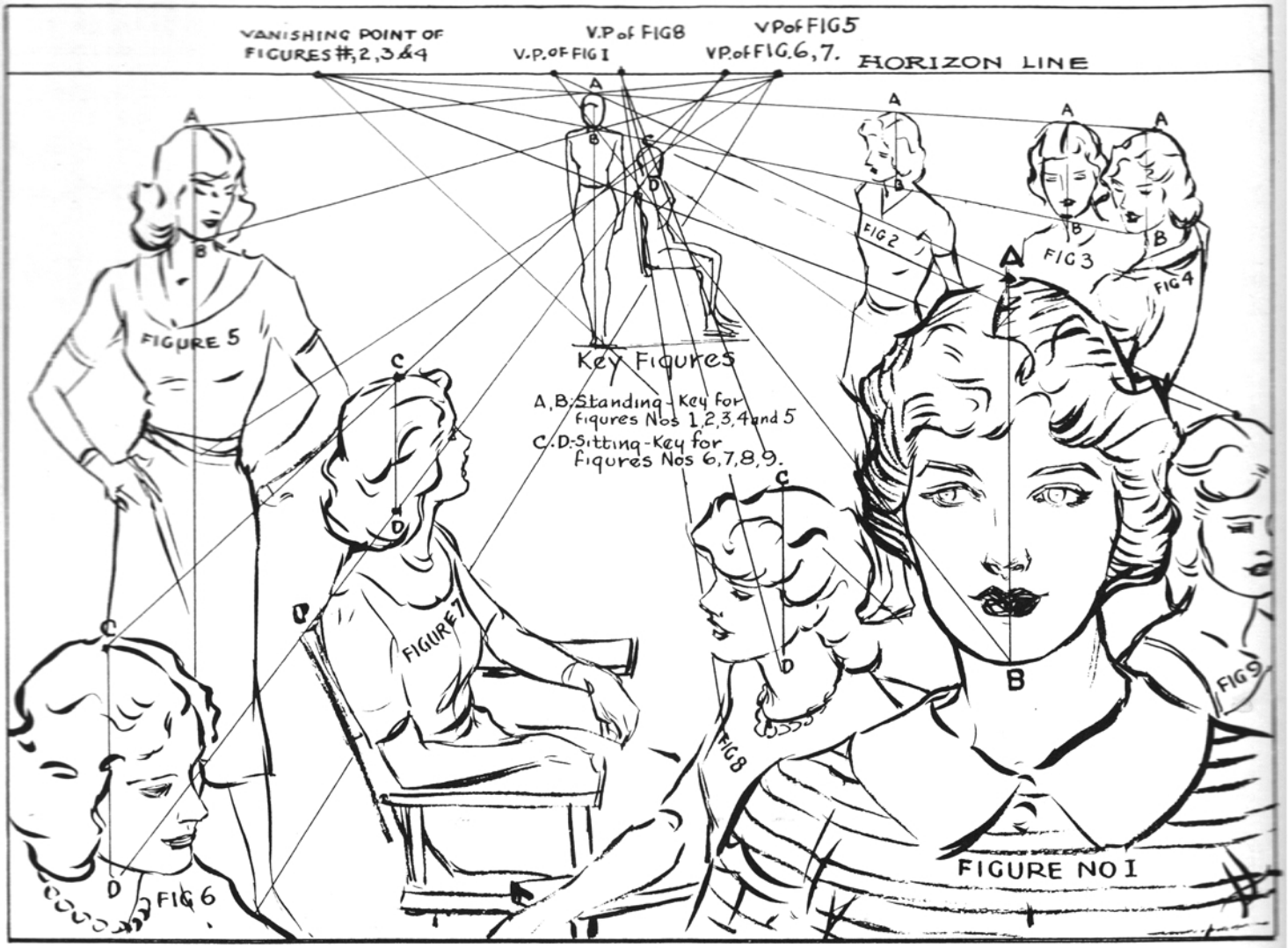
Mary gets too big - or she

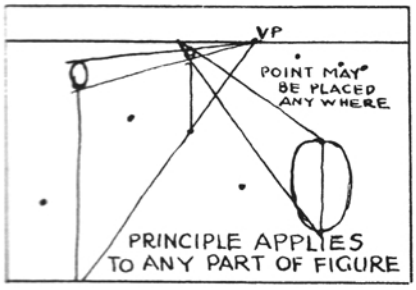
may get too small - or

appear to be diving—

Thus endeth John and Mary

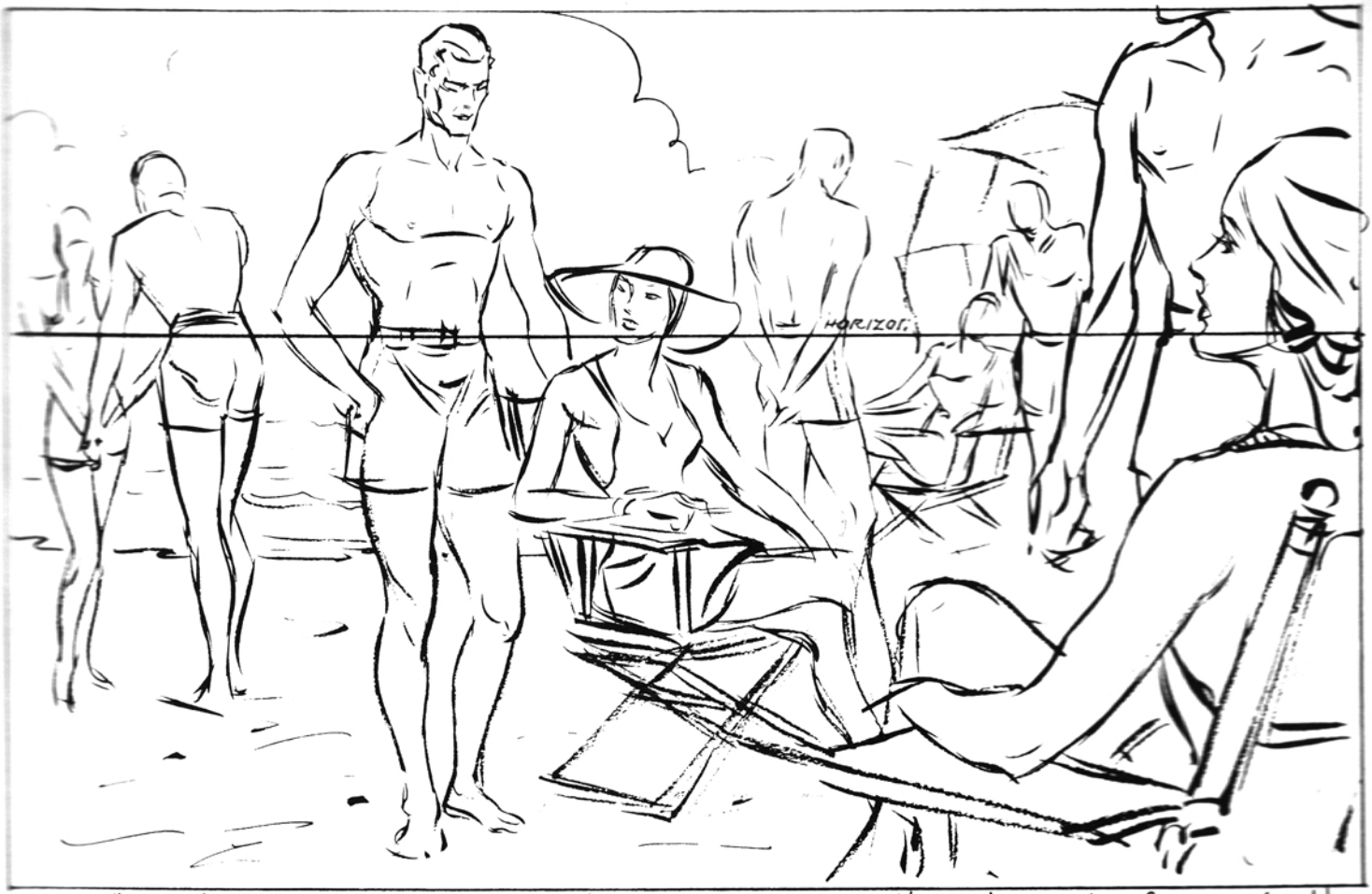
FINDING PROPORTION AT ANY SPOT IN YOUR PICTURE





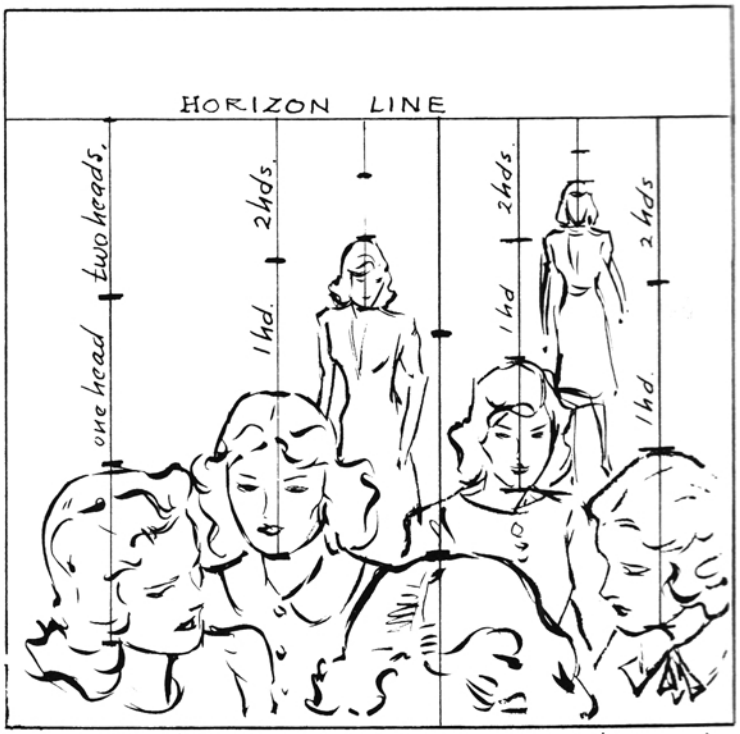
Many artists have difficulty in placing figures in their picture and properly relating them to each other, especially if the complete figure is not shown. The solution is to draw a key figure for standing or sitting poses. Either the whole figure or any part of it can then be scaled with the horizon. *AB* is taken as the head measurement and applied to all standing figures; *CD* to the sitting figures. This applies *when all figures are on the same ground plane.* (On page 37 there is an explanation of how to proceed when the figures are at different levels.) You can place a point anywhere within your space and find the relative size of the figure or portion of the figure at precisely that spot. Obviously everything else should be drawn to the same horizon and scaled so that the figures are relative. For instance, draw a key horse or cow or chair or boat. The important thing is that all figures retain their size relationships, no matter how close or distant. A picture can have only one horizon, and only one station point. The horizon moves up or down with the observer. It is not possible to look over the horizon, for it is constituted by the eye level or lens level of the subject. The horizon on an open, flat plane of land or water is visible. Among hills or indoors it may not be actually visible, but your eye level determines it. If you do not understand perspective, there is a good book on the subject, *Perspective Made Easy,* available at most booksellers.

"HANGING" FIGURES ON THE HORIZON



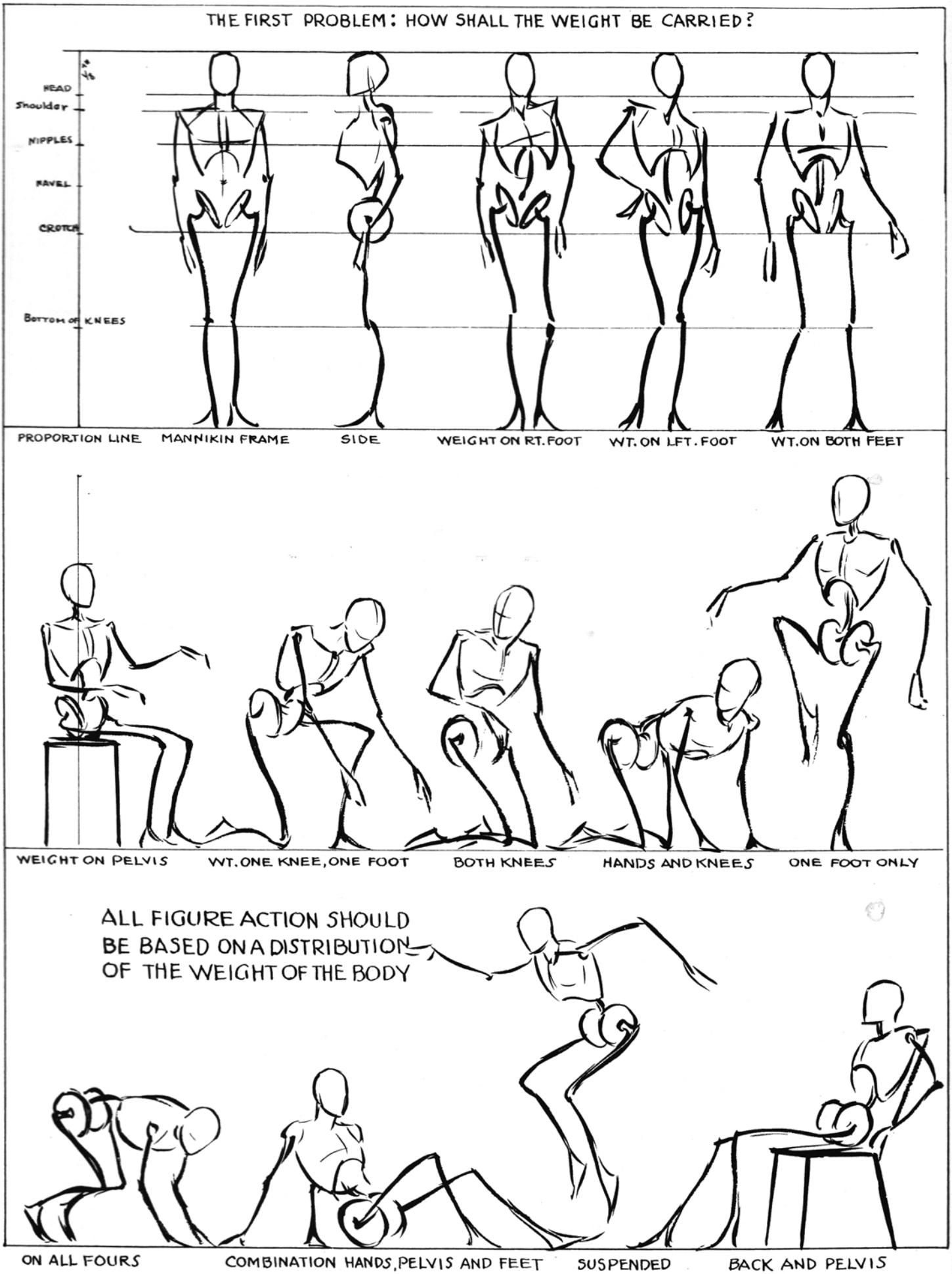
You can "hang" your figures on the Horizon line by making it cut through similar figures in the same place. This keeps them on the same ground plane. Note Horizon cuts men at waist and the seated women at chin. The one standing woman at left is drawn relative to the men. Simple?

You can also "hang" heads on the Horizon line. In this case it cuts men's heads at the mouth, the womens at the eyes.

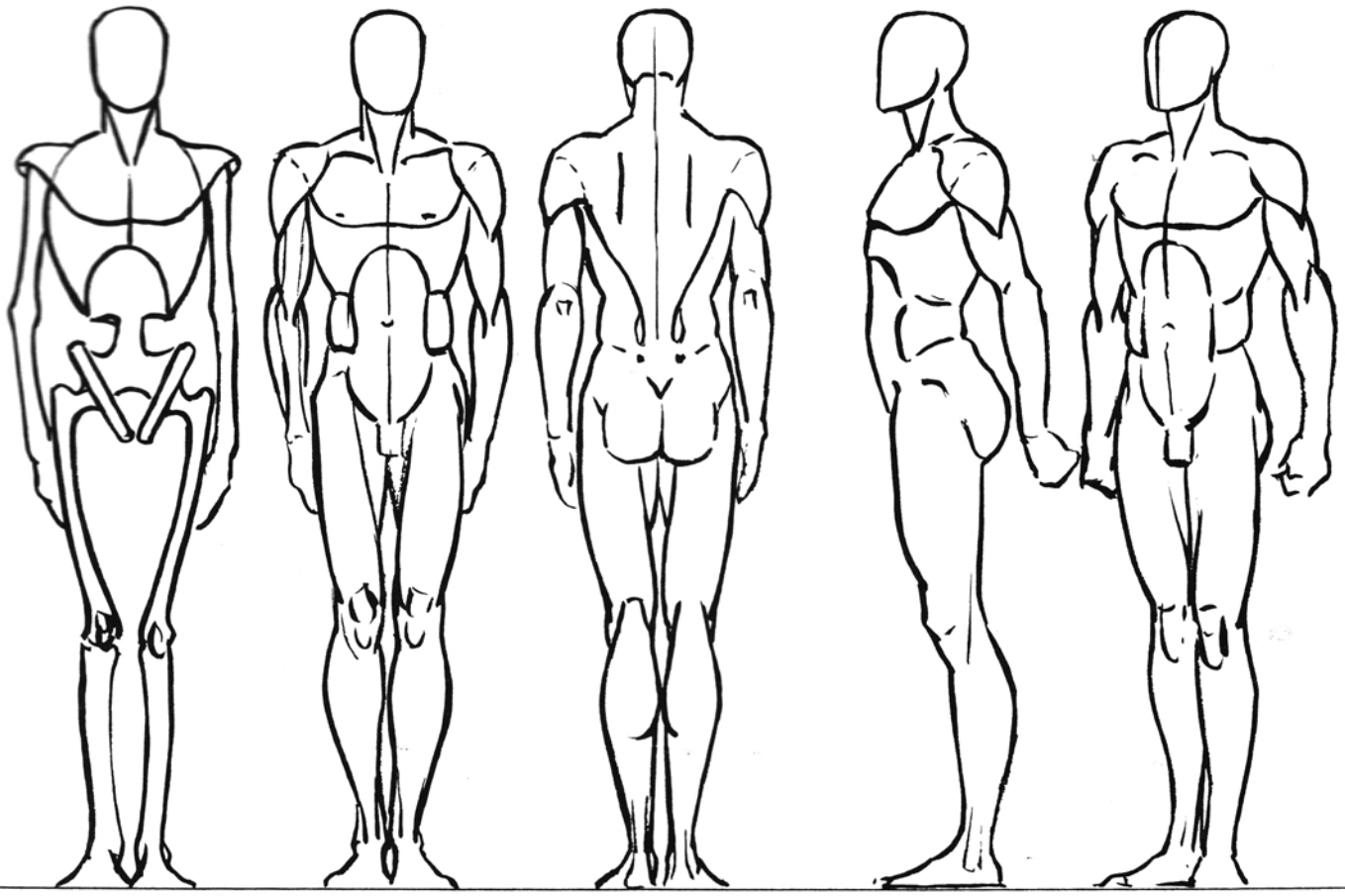


Here we have measured a proportionate distance down from the Horizon. I have taken two heads as an optional space.

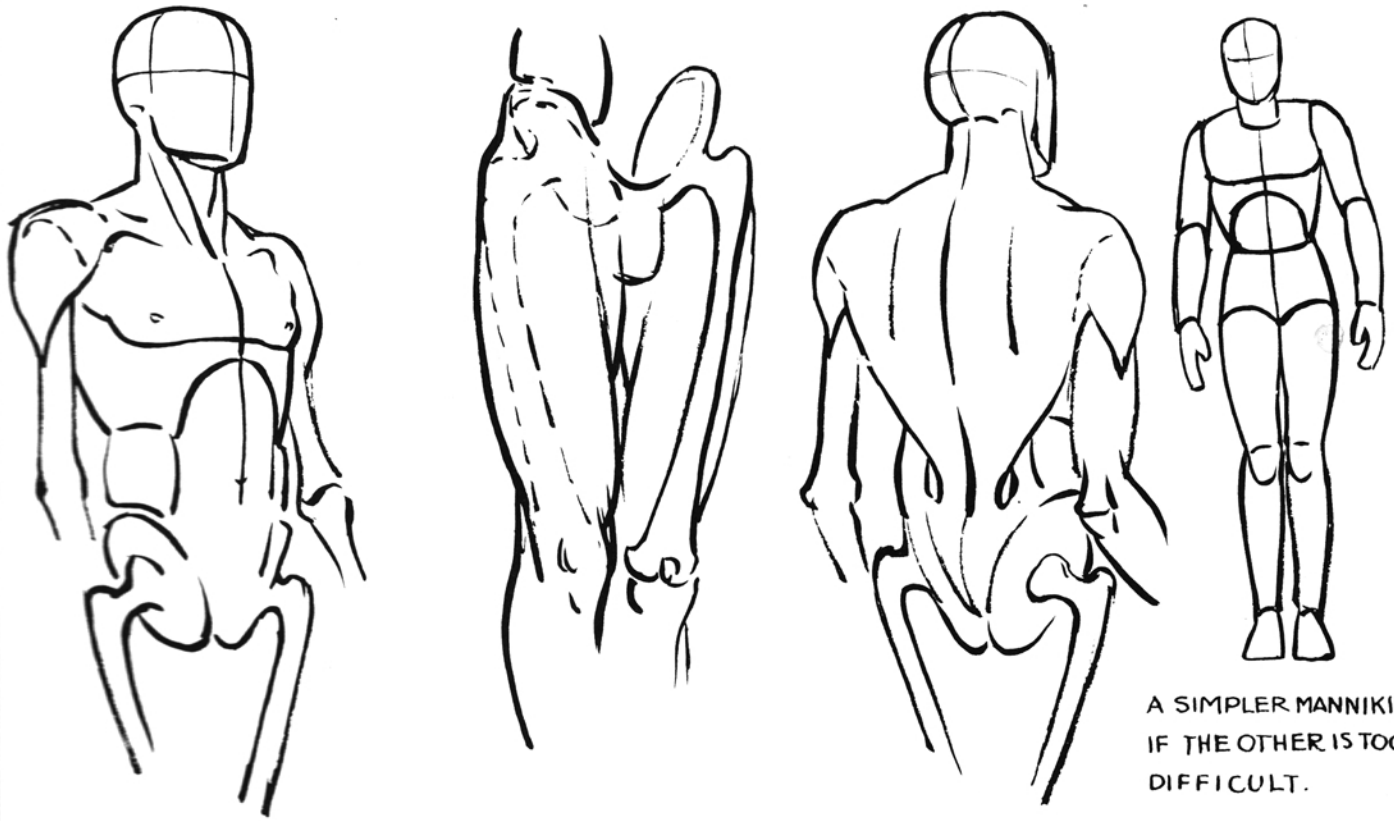
WE BEGIN TO DRAW: FIRST THE MANNIKIN FRAME



THE GROUPS OF MUSCLES SIMPLIFIED.



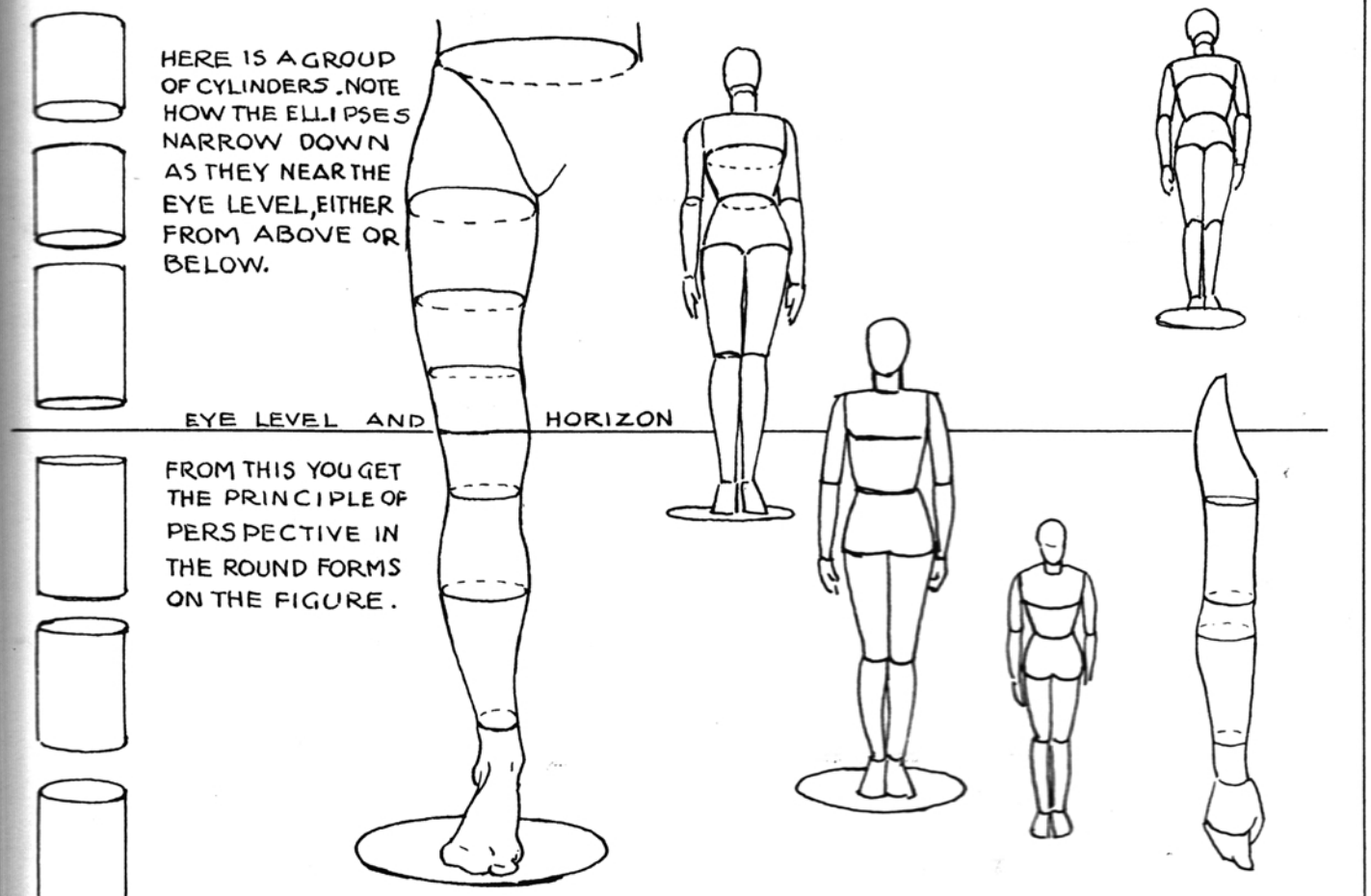
DEVELOPING THE PREVIOUS FRAME WITH SIMPLIFIED MUSCLE GROUPS LAID ON TOP.



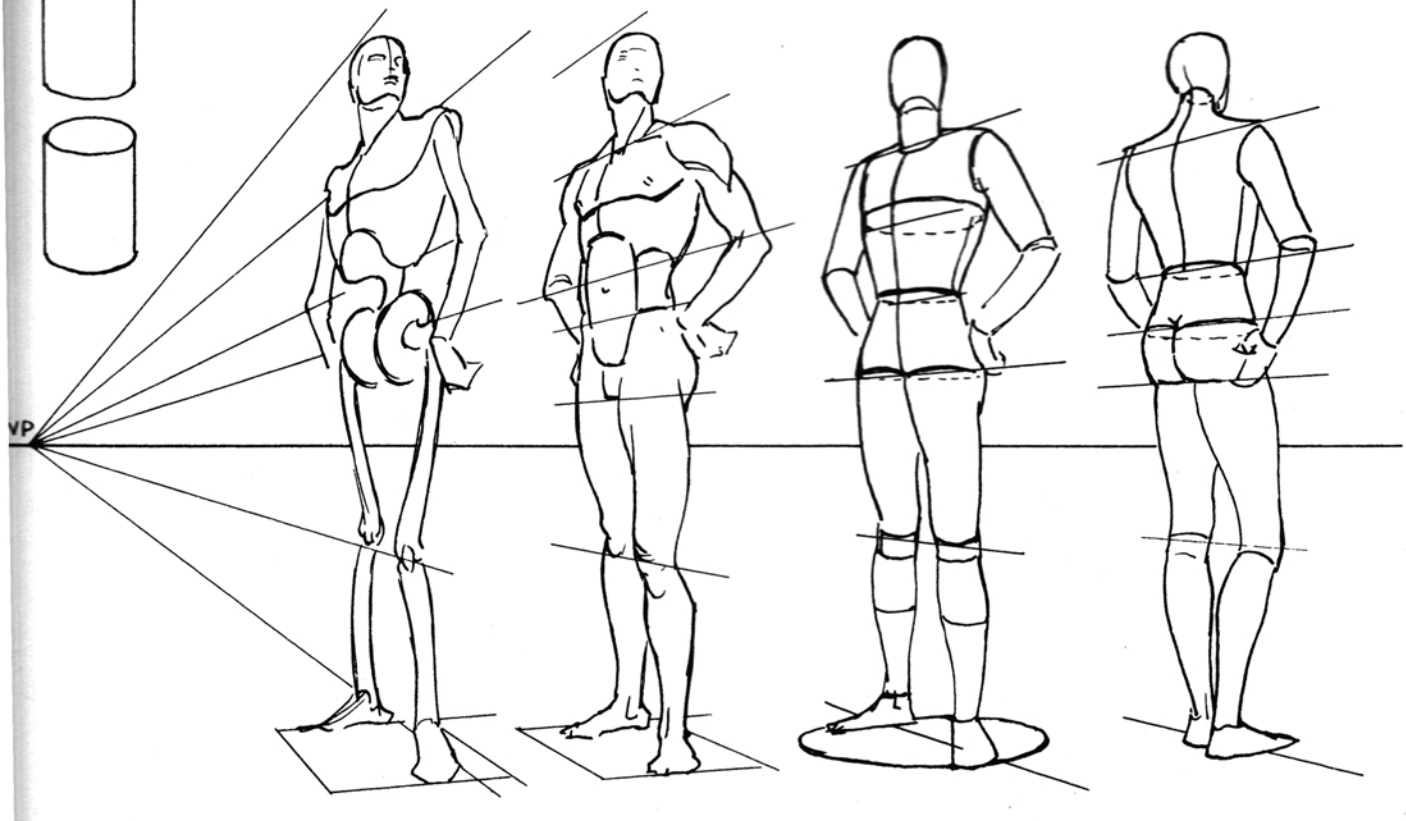
A SIMPLER MANNIKIN IF THE OTHER IS TOO DIFFICULT.

WE WILL STUDY THE "ACTUAL" BONE AND MUSCLE CONSTRUCTION LATER. GET THIS.

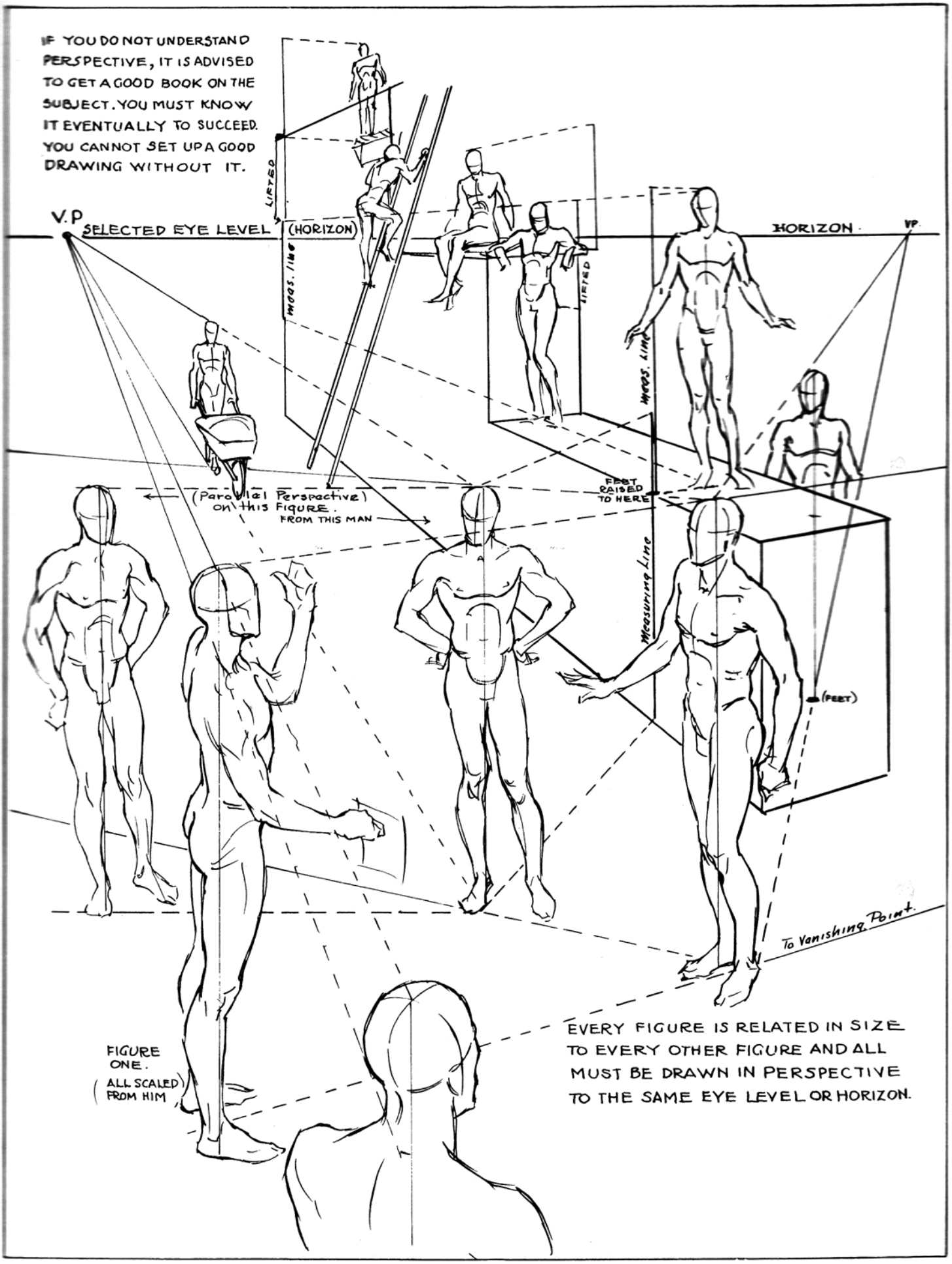
ADDING PERSPECTIVE TO THE SOLID MANNIKIN


HERE IS A GROUP OF CYLINDERS. NOTE HOW THE ELLIPSES NARROW DOWN AS THEY NEAR THE EYE LEVEL, EITHER FROM ABOVE OR BELOW.
EYE LEVEL AND HORIZON
FROM THIS YOU GET THE PRINCIPLE OF PERSPECTIVE IN THE ROUND FORMS ON THE FIGURE.

TRY DRAWING YOUR MANNIKIN FIGURE TO THE HORIZON

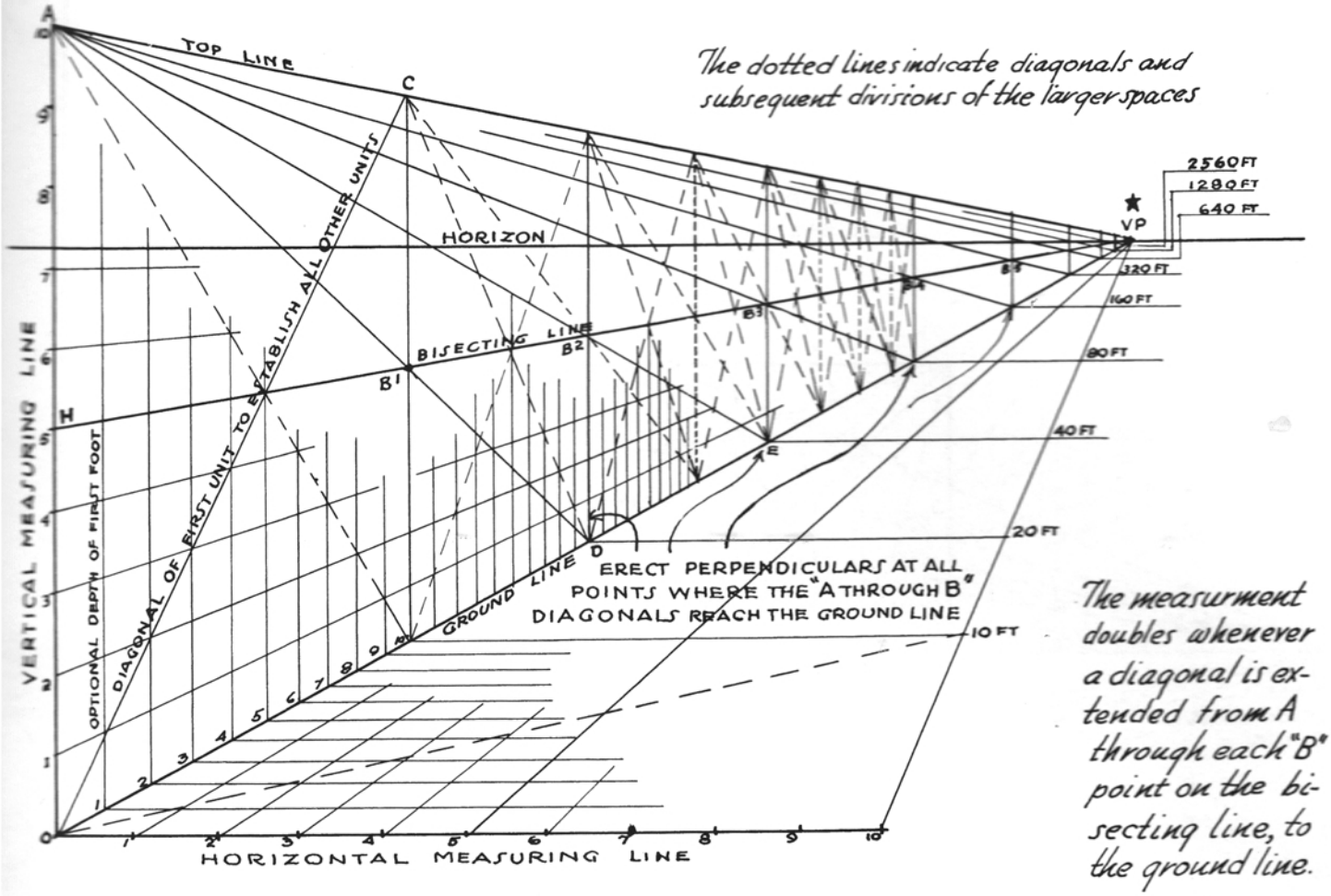


PLACING THE MANNIKIN AT ANY SPOT OR LEVEL


IF YOU DO NOT UNDERSTAND PERSPECTIVE, IT IS ADVISED TO GET A GOOD BOOK ON THE SUBJECT. YOU MUST KNOW IT EVENTUALLY TO SUCCEED. YOU CANNOT SET UP A GOOD DRAWING WITHOUT IT.
V.P
SELECTED EYE LEVEL
(HORIZON)
LIFTED
MEAS. LINE
HORIZON
VP
LIFTED
MEAS. LINE
(Parallel Perspective) on this Figure.
FROM THIS MAN
FEET RAISED TO HERE
Measuring Line
(FEET)
To Vanishing Point.
FIGURE ONE.
(ALL SCALED FROM HIM)
EVERY FIGURE IS RELATED IN SIZE TO EVERY OTHER FIGURE AND ALL MUST BE DRAWN IN PERSPECTIVE TO THE SAME EYE LEVEL OR HORIZON.

DRAWING TO SCALE

Every artist should know how to draw to a scale. Scale drawings usually require the division of vertical and horizontal planes into square feet or square units. By the plan shown here, we can quickly divide such planes into squares of any dimension. Here we take a unit of 10 by 10 feet. We measure with this unit as far back as 2500 feet, which is as much as you will ever need. This is very valuable to you.

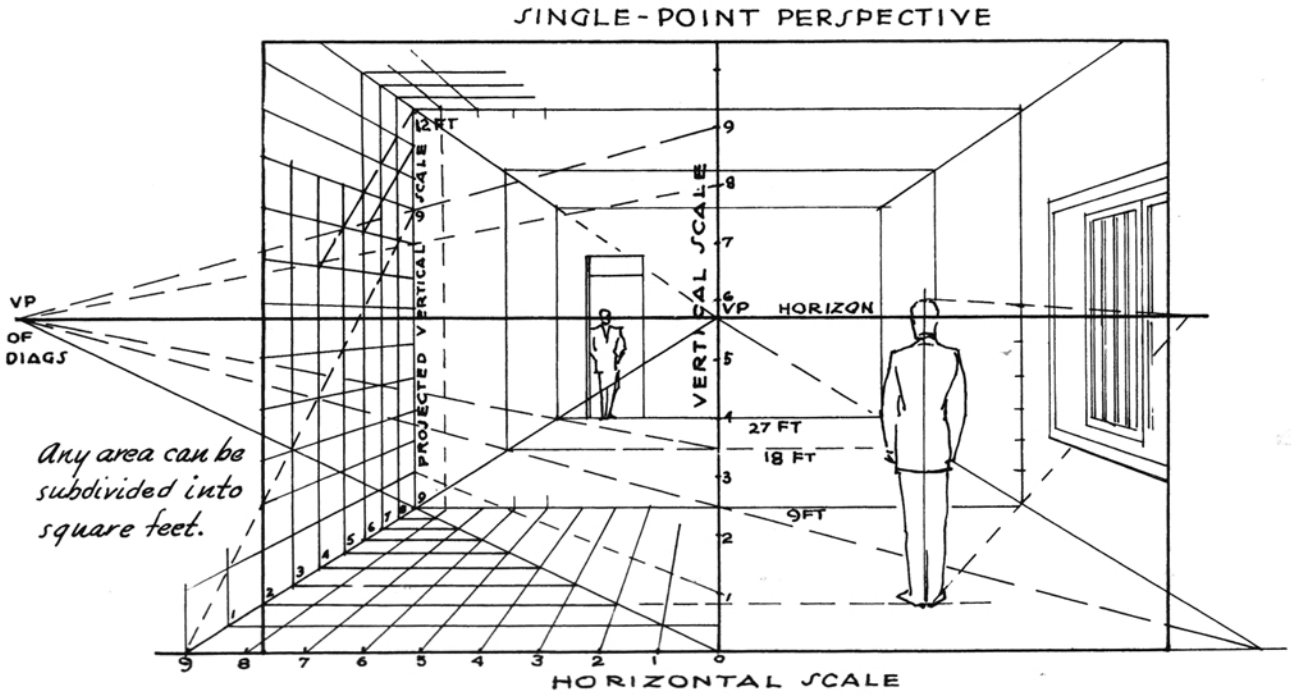

TOP LINE
HORIZON
VP
BISECTING LINE
DIAGONAL OF FIRST UNIT TO ESTABLISH ALL OTHER UNITS
OPTIONAL DEPTH OF FIRST FOOT
VERTICAL MEASURING LINE
HORIZONTAL MEASURING LINE
GROUND LINE
ERECT PERPENDICULARS AT ALL POINTS WHERE THE "A THROUGH B" DIAGONALS REACH THE GROUND LINE
2560 FT
1280 FT
640 FT
320 FT
160 FT
80 FT
40 FT
20 FT
10 FT
The dotted lines indicate diagonals and subsequent divisions of the larger spaces
The measurment doubles whenever a diagonal is extended from A through each "B" point on the bisecting line, to the ground line.

How to scale a vertical and a horizontal plane

We must first establish a vertical and a horizontal measuring line, touching each other at right angles, (point zero). On both lines we lay out 10 equal units to represent 10 feet. The size of a unit is optional. The horizon is then set at any desired height on the vertical measuring line. We then establish a vanishing point anywhere on the horizon. Connect points O, H and A to V.P. Establish optional depth of the first foot. Then draw lines from all foot units toward V.P. Diagonal of first foot (OC) marks off vertical divisions of foot units and also the first 10 ft. unit at point C. Diagonal "A through B' (on the bisecting line) to D," marks off 20ft. on the ground line. Then AB² to E is 40 ft, and so on to infinity. ★

SCALING THE INSIDE PLANES OF THE BLOCK

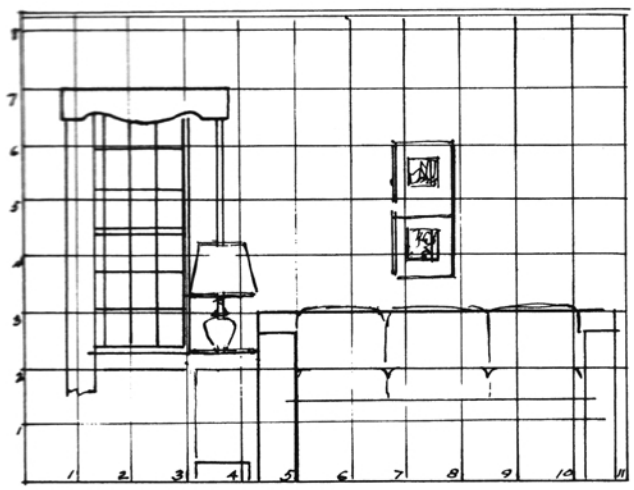
The vertical and horizontal scales can be used to scale any plane. Once we have the unit lines running in one direction, the diagonal of any square in crossing these lines marks off the units running in the other direction, for width or depth as the case may be. All diagonals of similar squares or units will have the same vanishing point.

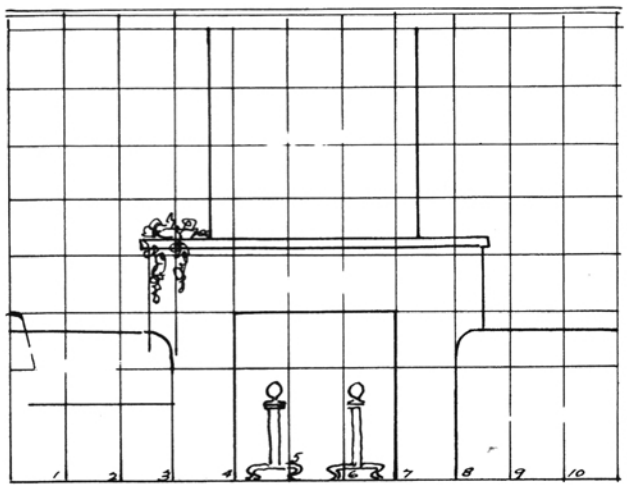


In the drawing above the following problem is worked out. Draw a room 18 by 27 by 12 ft. at normal eyelevel, with two figures standing 25 ft. apart, in single-point perspective. Solution: Establish a vertical scale on a horizontal scale. Mark these off in foot units to be equal on both scales. Set the horizon at slightly less than 6 vertical feet. Set vanishing point at intersection of horizon and vertical scale. Connect horizontal units to VP. Establish depth of first square foot. Draw diagonal to horizon. This establishes VP of the diagonals for all receding units and also creates a unit 9 by 9 ft. Repeat this unit with diagonals as shown.

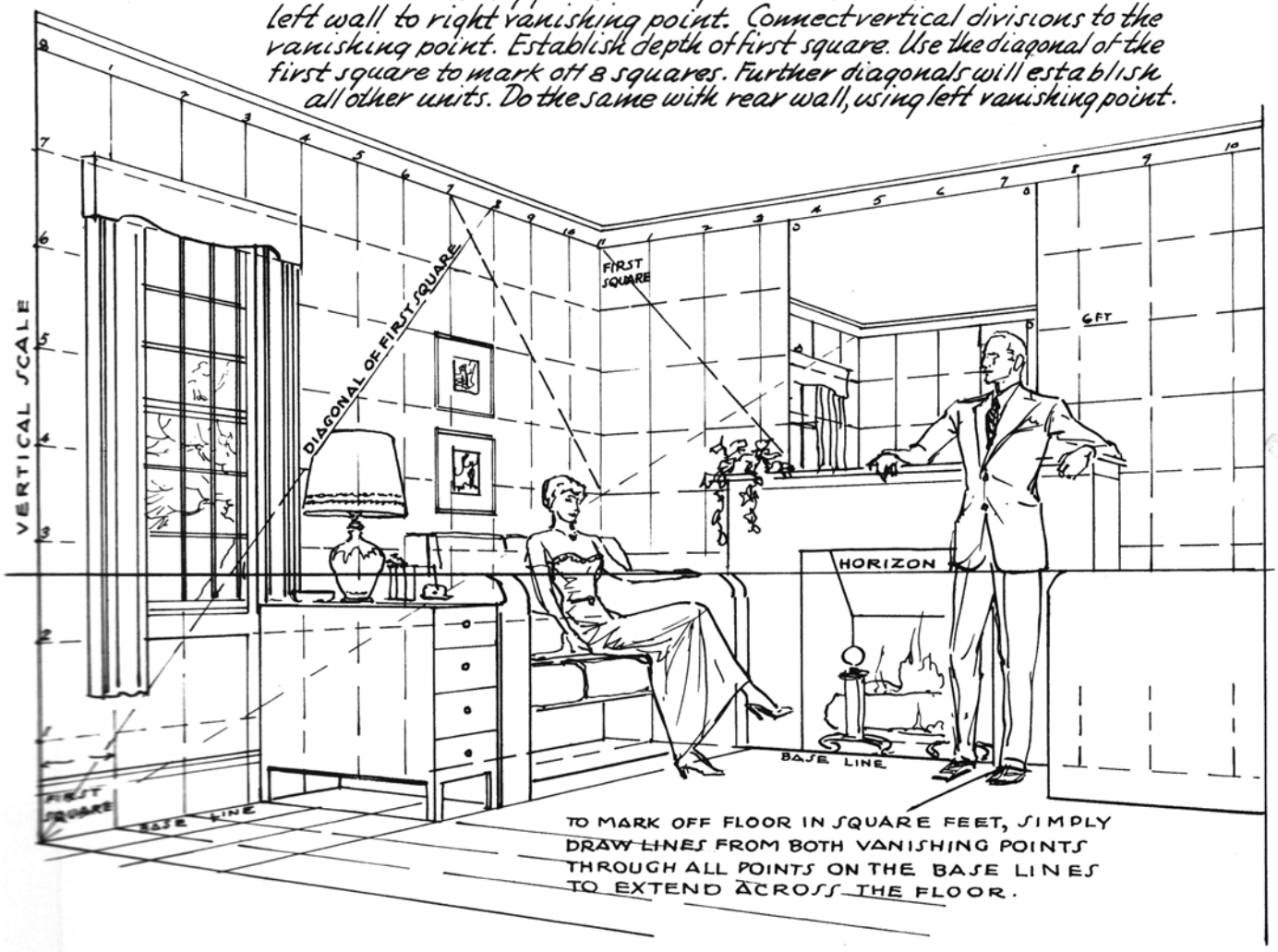
SCALING AN INTERIOR FROM ELEVATIONS

The importance of being able to scale inside walls and floors should be obvious to anyone interested in good drawing. When you can do this, you can draw any interior and any furnishings within an interior, keeping all things in scale or proportion to each other, and you know what size a figure should be at any spot in the room.



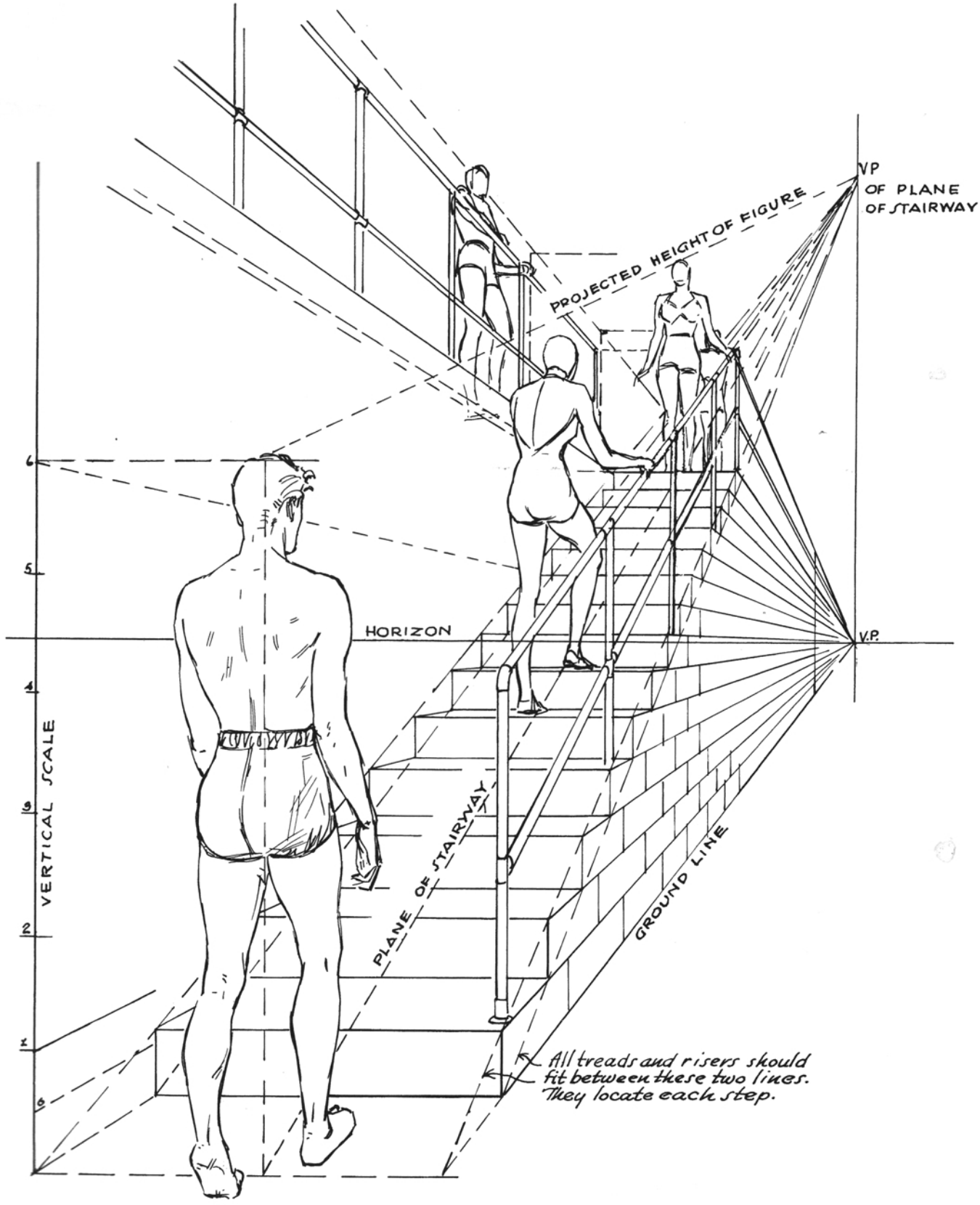


Establish a vertical scale. Mark off height of intended wall in feet. Establish a horizon cutting vertical scale at desired height. Establish vanishing points at right and left. Draw the base line for left wall to right vanishing point. Connect vertical divisions to the vanishing point. Establish depth of first square. Use the diagonal of the first square to mark off 8 squares. Further diagonals will establish all other units. Do the same with rear wall, using left vanishing point.


VERTICAL SCALE
DIAGONAL OF FIRST SQUARE
FIRST SQUARE
6 FT
HORIZON
BASE LINE
FIRST SQUARE
BASE LINE
TO MARK OFF FLOOR IN SQUARE FEET, SIMPLY DRAW LINES FROM BOTH VANISHING POINTS THROUGH ALL POINTS ON THE BASE LINES TO EXTEND ACROSS THE FLOOR.

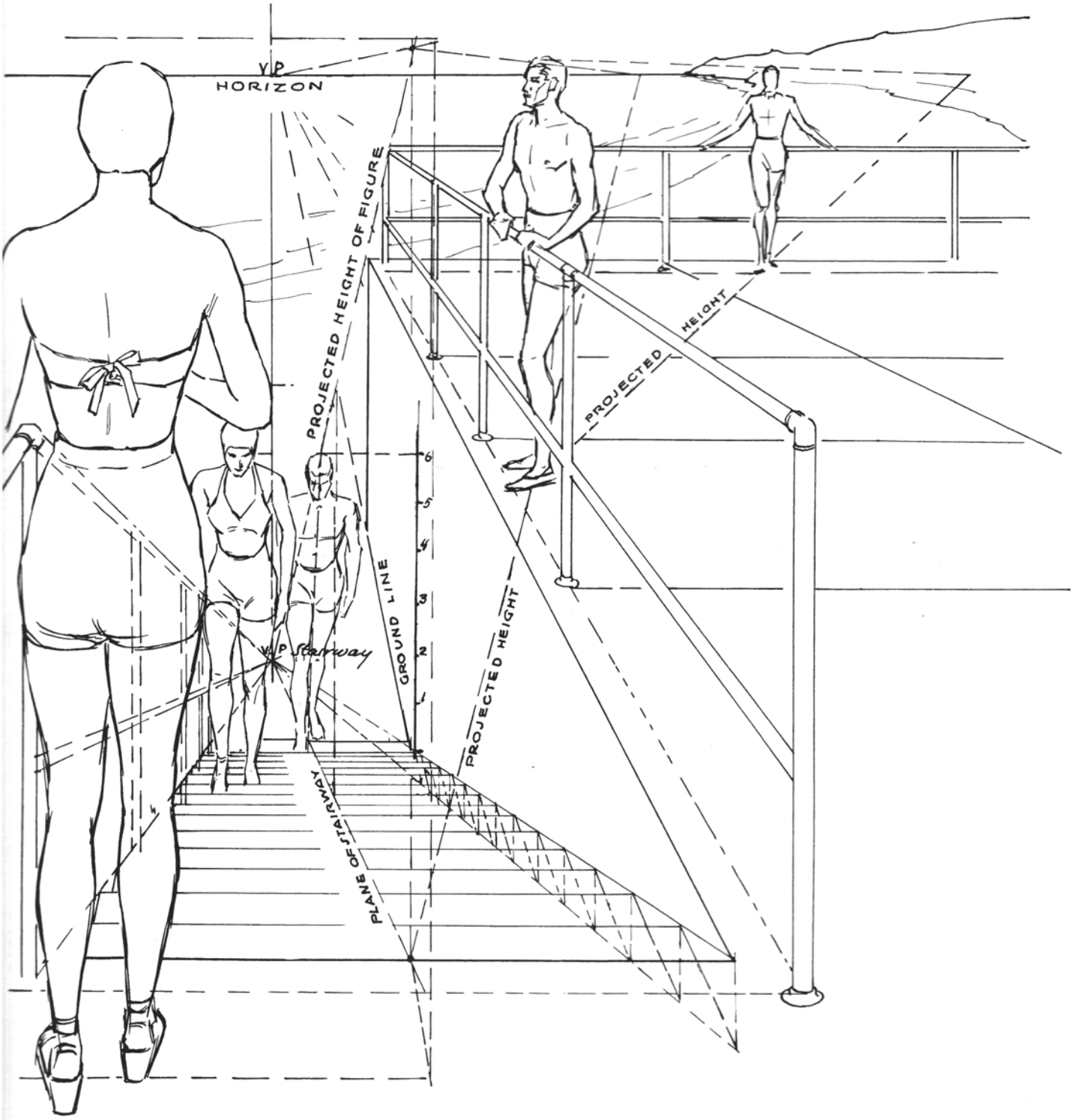
INCLINED PLANES IN PERSPECTIVE

It is important to know how to draw a stairway in correct perspective and how to project figures upon any step. This is not difficult to do. The plane of the stairway locates all the points of the risers. The treads all have the same vanishing point on the horizon. Scale the height of the risers to the figure, as shown in the drawing below.



INCLINED PLANES IN PERSPECTIVE

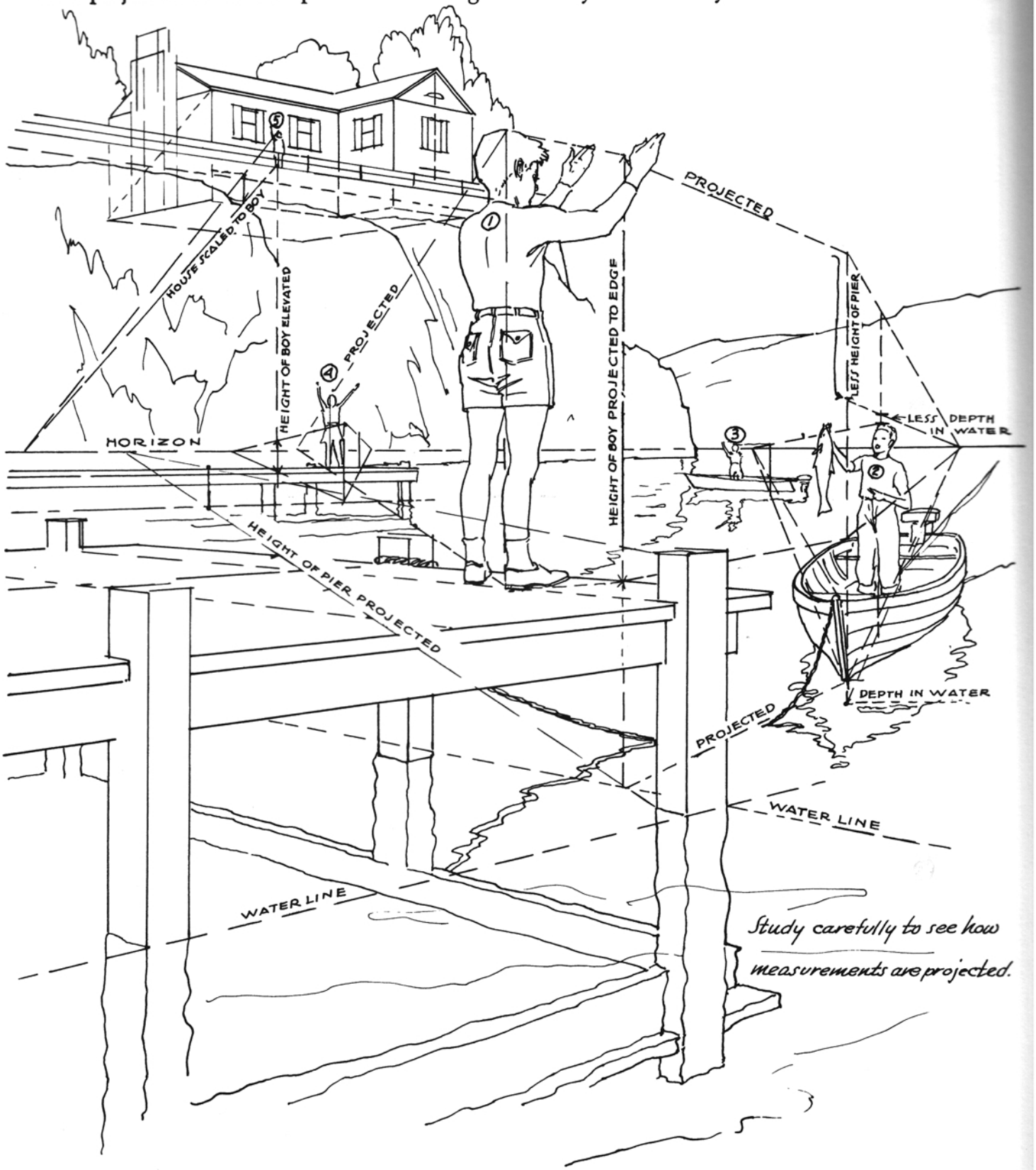
Here we reverse the problem on the preceding page, but we can still scale all the figures from the one at the bottom of the stairway. Note that we still have the two lines which give us the size of the risers and treads as they come up the plane of the stairway. The figures are in approximately the same positions.



The observer's position now appears to be at the top of the stairway looking down upon the same scene. How important is perspective!

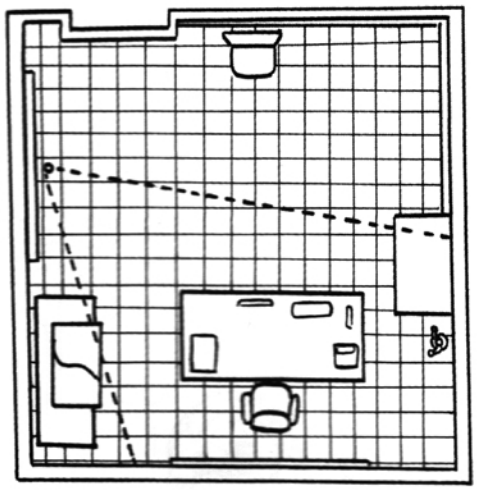
PROJECTION OF MEASUREMENTS

Everything in a picture has a relative size according to its position in perspective. In the drawing below, the height of the boy (1) has been projected to several positions. Although this drawing was made without models or copy, the relative sizes of figures and other units are convincing because the perspective is correct. Study this carefully.

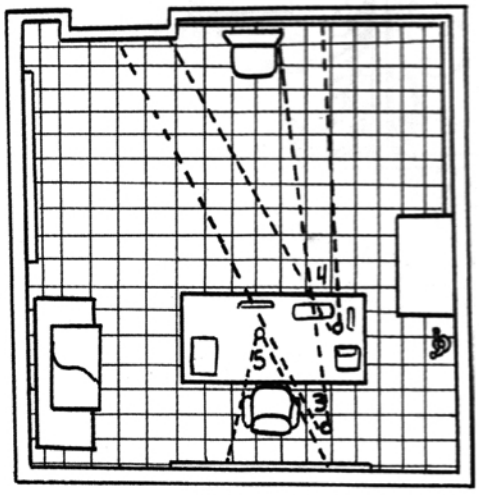


We are establishing a set, which will serve as the layout of the environment we want to render. Remembering that the size and shape of the environment will not change throughout, let's set up a couple of different shots in this room:

Let's look at that second, larger panel. The angle at which the scene is being shot seems to be from the bottom right of the office, at a slight high angle, framing both characters in the scene. If we were to set that up on a floor plan before we were to draw the scene, we could represent it like this:



Now we not only know the type of shot that we want but we've also established what would be visible within said shot, thus helping in the upkeep of the visual continuity. Next, looking at the following shots, we could break them down as follows:



Get the picture? Our stage is now stronger and deeper due to the understanding of our layout.

Floor plans are not restricted to interiors, either. Mapping an established environment can not only make blocking a scene a simpler task but also allow